Four Point Listening and Speaking Intro: English for Academic Purposes
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1 Architecture: Applied Science

An applied science is one in which people use science to do something practical. Architecture is often considered an applied science because it involves using science to construct something that people use, such as buildings. Architects must think about design so the building looks nice, while also considering technical aspects to make the building safe and functional. This unit explores architecture as an art and as a science.

Part 1: Architecture as an Art and a Science

Pre-Listening Activities

Writing a definition for the word *architecture* can be difficult because it involves both art (or design) and science (or engineering). Some architects like the blend because they have a chance to be both creative and practical. Even for the earliest works of architecture, the blend of art and science was a part of the field. Answer these questions with a partner.

1. Which part of architecture do you think you would like better—art or science? Why?

_____

_____

_____

2. What types of buildings would you want to develop?

_____

_____

_____

3. What kinds of things do you think an architect needs to think about for the design? For the science?

_____

_____

_____

Strategy: Listening for and Giving Encouragement in Discussion

In English, it is important to notice when a speaker is encouraging you to participate. There are several strategies a speaker may use to ask you to participate. These strategies are good to use when you are the speaker too.

Ask Questions

- when you can't hear the speaker

  Excuse me. I could not hear what you said about that building. Will you say it again?

- when you can't understand the speaker

  Excuse me. I don't know what kind of architecture that is. Can you explain it?

- when you want to make sure you understood (especially with names and numbers)

  When did you say that happened? 1988?

- when you need more information

  I have not heard of that architect. How do you spell that name?

- when you want more information

  Where is that building?

Make Requests

- for more information

  That type of architecture is new for me. It's interesting. I'd like to learn more.

  Can you spell that?

- for something to be repeated

  Would you repeat the question, please?

  Will you say that again?

- for an example

  What is an example?

Paraphrase

- when you want to make sure you understand

  So he's excluding bridges as a work of art, right?

  Did you say _____?

Use Voice Fillers

Hmmm.	**Go on.**	**Really?**
Oh.	**Yes. Yeah.**	**Tell me more?**
Wow.	**Unh uh.**	**Cool. That's cool.**
That's interesting.	**Right.**	

Pronunciation Note: **Intonation** is the pitch—or the rising and falling of the voice when someone is speaking. In English, sometimes a person's pitch goes up. Other times, a person's pitch falls. When asking questions that that have a yes or no answer, use **rising** intonation. When asking *wh-* questions, use **falling** intonation. If you use the opposite intonation, the speaker might think you are being rude, misunderstanding the information, or expressing a different emotion.

Yes-No Questions	*Wh-* Questions
Do you live near here?	Where do you live?
Is tomorrow's test on both chapters?	What is tomorrow's test on?
Have you visited the Eiffel Tower?	Which famous sites have you visited?

Pronunciation Note: Some voice fillers can use rising intonation as well, making them sound like a question and encouraging the speaker to repeat or give more information. Review the list of fillers given.

Listening for and Giving Encouragement in Discussion

Work with a small group. Divide the reading on pages 5–6 into equal parts. Imagine you are the instructor discussing your research with students. Read your part of the reading to the other members of your group, and be prepared for them to be encouraging in the discussion by using the strategies in the box on pages 3–4. Take turns being the instructor and the student. Use this space to take notes while your classmates are the instructors.

_____

_____

_____

Reading

Reading about Architectural Achievements

Read about the Historic American Building Survey (HABS), the Historic American Engineering Record (HAER), and some architectural achievements. Then look for photos of each online.

Overview

(1) The Historic American Buildings Survey (HABS) and the Historic American Engineering Record (HAER) collections are among the largest and most heavily used in the Prints and Photographs Division of the Library of Congress. Since 2000, documentation from the Historic American Landscapes Survey (HALS) has been added to the holdings. The collections document achievements in architecture, engineering, and design in the United States and its territories through a comprehensive range of building types and engineering technologies, including examples as diverse as the Pueblo of Acoma, houses, windmills, one-room schools, the Golden Gate Bridge, and buildings designed by Frank Lloyd Wright. Administered since 1933 through cooperative agreements with the National Park Service, the Library of Congress, and the private sector, ongoing programs of the National Park Service have recorded America's man-made environment in multiformat surveys comprising more than 556,900 measured drawings, large-format photographs, and written histories for more than 38,600 historic structures and sites dating from Pre-Columbian times to the twentieth century.

Golden Gate Bridge, San Francisco, California

(2) An international icon of American engineering genius, the Golden Gate Bridge opened in 1937 and remains one of the longest suspension bridges in the world. The main span of 4,200 feet crosses the turbulent waters at the entrance to San Francisco Bay. Chief engineer Joseph B. Strauss started the construction project in 1933.

Ritter Ranch barn, Dolores vicinity, Colorado

(3) This wooden dairy barn, built in 1918, is the largest outbuilding on the Ritter Ranch, once the most technologically advanced ranch in the Lower Dolores Valley of Colorado. Divided crosswise by a central breezeway on the first floor and lengthwise by two rows of wooden poles supporting the roof, the barn has an airy and peaceful hayloft that contrasts sharply with the complicated machinery of the work area below.

First Church of Christ, Congregational (Meetinghouse), Farmington, Connecticut

(4) The First Church of Christ is Connecticut's best surviving example of a colonial-era meeting house. Built in 1771 by Captain Judah Woodruff, who also built many of the houses in Farmington, the church has undergone only minor alterations and still retains its side entrance; graceful, tall steeple; and plain, boxy styling. The church has played an important role in the town since it was built. In 1841, for instance, the African captives from the Spanish slave ship *Amistad* lived in Farmington and attended the First Church of Christ for several months while awaiting passage back to Africa.

The Arsenal, New Castle, Delaware

(5) The U.S. government built this arsenal in 1809 under threat of war with Britain. Originally a one-story building with a wagon entrance at each end to help with the storage and distribution of arms, the Old Arsenal played an important role in both the War of 1812 and the Mexican War of 1846–48. It also housed the garrison from nearby Fort Delaware when that fort burned in 1831. The second story and cupola date from the 1850s, when the building was converted into a public school.

Adapted from Library of Congress, *American Memory*, "Built in America."

Listening 1: Getting the Information You Need

Listening for Information

The listening passage is a conversation between a student and a teaching assistant. They are discussing the definition of architecture. The student needs more information about the content and uses several strategies to learn the information. As you listen to the conversation, write answers to the questions.

Listening for Information

1. What questions does the student ask the TA to encourage discussion?

_____

_____

_____

2. What is the purpose of each of his questions? In other words, what is he trying to accomplish with each question?

_____

_____

_____

3. What requests does he make?

_____

_____

_____

4. List any voice fillers you hear.

_____

_____

_____

Speaking

Greetings

Before starting a conversation or discussion, most people begin with a greeting. This sometimes breaks the ice and helps the interaction seem friendly and open. There are many greetings in English, and some are more formal than others.

GREETINGS

Formal	Informal
Hello.	Hi.
Good morning/afternoon/evening.	Hey.
How are you?	How you doing?
It's nice to see you.	What's up?
It's been a long time.	Long time, no see.
How have you been?	How's it going?
How are things going?	What's new?

Using Greetings

Think about greetings and answer these questions with a partner. Then share your ideas with the class.

1. Would you greet each of these people formally or informally?
   a. your English teacher _____
   b. an instructor in your department _____
   c. the department chairperson _____
   d. your roommate _____
   e. a relative _____
   f. a cashier at the bookstore _____
   g. a new classmate who sits next to you in class _____

2. What greetings do you frequently use every day? Add other greetings to the list on page 8.

_____

_____

3. What things affect the greeting and/or the response? Does the place or time of the interaction matter? Does the formality of the greeting affect the response?

_____

_____

Making Contact

Choose three greetings from the list on page 8, and greet three different English speakers. Take notes on the greeting you used, the response you received, and the details of the interaction (person's status, age, and gender, the time of day, and the location). Follow the example. Be prepared to discuss your data with the class.

Your Greeting	The Person's Response	Details of the Interaction
Hi.	Hi.	classmates, same age, male, morning, hallway

Part 2: Architecture as an Art

Pre-Listening Activities

What do you know about architecture? Although schools and universities offer classes about architecture, most people do not know much about it. They do not realize the science and engineering that goes into making a building. However, many buildings are recognizable and remembered for their unique appearance. The design is the creative side of architecture. Answer these questions with a partner.

1. Do you recognize these buildings? What are they? What city or country are they in?



_____

_____

_____

2. What do you like and dislike about each building?

_____

_____

_____

3. What is one of your favorite buildings—either one you have seen or one you have visited? Why do you like it?

_____

_____

_____

Strategy: Listening for and Determining the Speaker's Feelings

In English, speakers use different ways to express their feelings.

Language

Sometimes you can tell how someone feels by the words they choose to use or by extra words they add before a descriptive word.

I'm **so happy** we got to see the Sydney Opera House.

The Guggenheim Museum is **incredibly beautiful.**

The airport was **huge!**

Tone

You can also tell how a person feels by the particular tone of voice he or she uses. A person can sound happy, confused, or upset, or convey any other emotion.

Nonverbal Communication

Sometimes speakers convey feelings without saying anything at all.

- **Facial expressions** (smiling, frowning, open or closed eyes, open or closed mouth, raised eyebrows)
- **Eye contact** (direct or indirect)
- **Posture** (leaning forward, sliding down in the chair, standing or sitting straight)
- **Head movement** (nodding, shaking, tipping)
- **Gestures** (hand movements, symbols)

Notice how many speakers combine language, tone, and nonverbal communication to make their communication more powerful. Recognizing these things will help you understand others and help you better convey how you feel.

Pronunciation Note: **Tone** can also be conveyed through emphasis on certain words or saying vowel sounds longer than other sounds in the word.

I **just lo-ooove** the design of the Beijing National Stadium.

I **simply can-not** understand what that architect was thinking when he designed that museum!

The airport was **so-ooo** big that it was **very** overwhelming.

Listening for and Expressing Feelings

Write three sentences about buildings you can think of or are familiar with. Say them to a partner, expressing yourself clearly in English. Use a strategy or combination of strategies from the box on page 11. Can your partner tell how you feel about the buildings?

Your Sentences

_____

_____

_____

Speaking

I'm Sorry and *Excuse Me*

Two common phrases in English are *I'm sorry* and *Excuse me*. They are used often but for different reasons. Recognizing the differences will help you understand what other people mean and will make your own purpose clear when you are the speaker.

USE *I'M SORRY* TO . . .

apologize for forgetting or not knowing a person's name
apologize for hurting a person's feelings
apologize for interrupting
ask for repetition
correct something said incorrectly
express sadness for hurting a person physically
express sympathy for someone's situation
regret being late, saying the wrong thing, losing something
show you are sincere and accept responsibility for your actions
turn down an invitation

USE *EXCUSE ME* TO . . .

ask someone for a favor
be formal in academic or professional places
be polite after coughing, clearing your throat, sneezing, etc.
be polite with people you do not know well
get someone's attention
interrupt a speaker nicely
leave a room, conversation, group, etc.

Analyzing the Situation

Work with a partner. Read each situation, and decide what you would say or do in each situation. Include *I'm sorry* or *Excuse me*. Choose two situations, and write a dialogue for each on a separate sheet of paper.

1. You're at the library, and you need to know what time it is so you won't miss your architecture class. You want to ask the student sitting at the next table.
   _____
2. The teacher is collecting the design homework assignment, but you are not finished with it. You want to explain to the teacher. _____
   _____
3. Your pen ran out of ink during an office hour with your English teacher. You need to borrow a pen to finish taking notes about the advice for your building design. _____
4. You're at a party talking with a friend when you see a classmate from your architecture class come into the room. You want to go say hello. _____
   _____
5. You are unable to attend a party for your friend who won the school's design contest. You need to tell your friend you will not be there. _____
   _____
6. You dropped water on your roommate's model building. You want to tell your roommate what happened. _____

Listening 2: Managing Group Dynamics

Listening in Groups (Video)

Listen to the students work together to decide on the type of building to report on for their architecture class. Discuss the questions in a small group.

Focus on Language

1. What greetings do the students use? Refer to those given on page 8.

_____

_____

2. What can you guess about their relationships based on their greetings?

_____

_____

3. Make a list of when you hear the phrases *I'm sorry* and *Excuse me*. What does each one mean? Do you think there are other times students could use the phrases?

_____

_____

_____

4. Write any phrases or idioms that you are not familiar with. Discuss what they mean and in what type of interactions they are appropriate.

_____

_____

Focus on Tone

1. Describe the tone and emotion used by each member of the group.

_____

_____

2. How can you tell how each person is feeling?

_____

_____

3. Is each person's tone appropriate for the situation? Why or why not?

Focus on Nonverbal Communication

1. What nonverbal cues are used to show how each member of the group feels about ideas from other group members?

2. Were any of these inappropriate? Why or why not?

3. Which student do you think is the best at nonverbal communication? Is this good or bad for the interaction?

Summary

1. What strategies do the students use to encourage communication?

2. Which student uses the best combination of words, tone, and nonverbal communication? Support your answer.

3. Who would you most want to work with? Why? Who would you rather not work with? Why?

_____

_____

_____

_____

Information Gap

One interesting feature of architectural design is its height—how many floors and how many feet high. Because designs vary, it is not always the buildings with the most stories that are the highest in feet.

Work with a partner to complete the chart. Person A has Chart 1 on page 17, and Person B has Chart 2 on page 18. Work back to back to complete the information. Ask for information and for clarification if you need to.

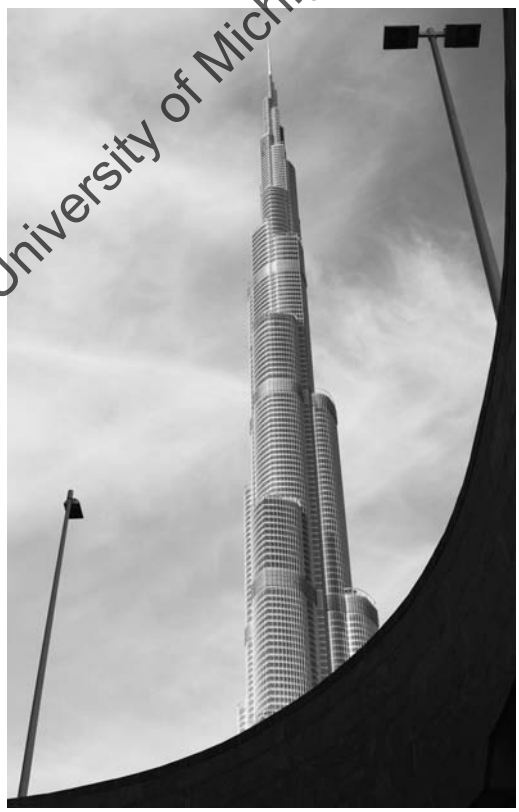

CHART 1

Ranking	Building	Stories	Height (in feet)	Year Completed
1	Burj Khalifa (Dubai, United Arab Emirates)	162		2010
2	Taipei 101 Tower (Taiwan)	101	1,671	2004
3		101	1,614	2008
4	International Commerce Centre (Hong Kong)		1588	2010
5		88	1,483	1998
6	Nanjing Greenland Financial Center	66	1,476	
7	Willis Tower (Chicago, United States)	108	1,451	1974
8	Guangzhou West Tower (Guangzhou, China)		1,435	2010
9		88	1,380	1999
10	Two International Finance Centre (Hong Kong)	88		2003
11	Trump International Hotel (Chicago, United States)	96	1,362	
12	CITIC Plaza (Guanzhou, China)		1,283	1997
13	Shun Hing Square (Shenzhen, China)	69	1,260	1996
14	Empire State Building (New York, United States)	102	1,250	
15	Central Plaza (Hong Kong)	78		1992

Data from www.emporis.com/en/bu/sk/st/tp/wo/.

CHART 2

Ranking	Building	Stories	Height (in feet)	Year Completed
1	Khalifa (Dubai, United Arab Emirates)	162	2,717	
2	Taipei 101 Tower (Taiwan)	101	1,671	2004
3	Shanghai World Financial Center (China)		1,614	2008
4		108	1588	2010
5	Petronas Towers 1 and 2 (Kuala Lumpur, Malaysia)	88	1,483	
6		66		2010
7	Willis Tower (Chicago, United States)		1,451	1974
8	Guangzhou West Tower (Guangzhou, China)	103	1,435	2010
9	Jin Mao Building (Shanghai, China)	88	1,380	1999
10		88	1, 362	2003
11	Trump International Hotel (Chicago, United States)	96		2009
12	CITIC Plaza (Guanzhou, China)	80	1,283	1997
13	Shun Hing Square (Shenzhen, China)		1,260	1996
14	Empire State Building (New York, United States)	102		1931
15	Central Plaza (Hong Kong)	78	1,227	

Data from www.emporis.com/en/bu/sk/st/tp/wo/.

Part 3: Architecture as a Science

Pre-Listening Activities

Most people notice what a building looks like when it is built. Not everyone thinks about the technical work that goes into constructing a building. Architecture includes aspects of science that not only make the building visually appealing but also functional to the people who will later use the building. Answer these questions with a partner.

1. What kinds of technical details do you think are involved in constructing a new building?

_____

_____

_____

2. What are some jobs that involve the science of building?

_____

_____

3. Do you think you would like working on the scientific aspects of a building? Why or why not?

_____

_____

_____

4. What types of practical things might conflict with designing the most beautiful building in the world?

_____

_____

Strategy: Listening for and Using Time Signal Words and Phrases

Speakers often use signal words to let you know the time something happened or will happen. It is a good idea to notice these because it helps you organize the content.

Time Signal Words and Phrases

- *first, second, third, another, next*

  To major in architecture, **first,** talk to your advisor.

  The **second** thing you should do is enroll in the Introduction to Architecture course.

  Third, talk to a professional architect to learn more about the job.

  Another thing to do is look at Architecture 101.

- *before, during, after/afterward, later*

  Before changing your major, you should talk to your advisor.

  The instructor will talk about the history of architecture **during** the lecture.

  There will be an examination **after** the course.

  We'll have a review session **later.**

- *in the past, in the future, used to be, currently, now*

  In the past, architects were responsible for all aspects of a building.

  No one knows how the study of architecture will change **in the future.**

  It **used to be** that one architect managed the whole project.

  Currently, some architects specialize on one aspect.

- *meanwhile*

  One architect is working on the design. **Meanwhile,** his partner is working on the measurements.

- *yesterday, today, tomorrow*

  The material we covered **yesterday** will be covered on the test.

  There is a study session **today.**

  Be prepared for the test **tomorrow.**

What others can you think of to add to the lists?

Using Time Signal Words and Phrases in a Story

Write a story, and add a few details about one of your classes. Add time signal words so your classmates can tell when things happen. Read your story in a small group.

Note-Taking

Strategy: Using an Abbreviation Log

Each student should have his or her own log of abbreviations. The abbreviations you choose should be used consistently for all your notes in all your classes. This will save you time. There are some common abbreviations used by native English speakers that you can use, or you can use your own. Use whatever will be easy for you to remember and use. A copy of your log should be in each of your notebooks or with you whenever you take notes. It can be handwritten or typed so you can add to it.

A sample log for the time signal words may look like this:

first = 1st	second = 2nd	third = 3rd	
before = b/f	during = d-ing	after = aft	afterward = a/w
past = ←	present = ↑	future = →	
meanwhile = m/w			
yesterday = ydy	today = tdy	tomorrow = tom	

You'll have a chance to practice abbreviations for time signal words and phrase in the lecture. Thinking about them before will help you to use them and miss less of what the instructor is saying.

Developing an Abbreviation Log

Write an abbreviation for some of these commonly used words in English, and share them with a partner.

because _____

falling _____

hour _____

large _____

medium _____

minute _____

rising _____

small _____

without _____

Make a list of words you commonly use in your own area of study. Then create an abbreviation for each, and add them to your log.

Vocabulary Power

There are a number of terms and phrases in this lecture that you may encounter in other academic settings. Add at least five vocabulary items to your vocabulary notebook or log.

Match the words in bold from the lecture on the left with a definition on the right.

1. _____ Yesterday we talked about what buildings look like from the outside and what we find **appealing** visually.
2. _____ Today I want to talk about some concerns an architect or engineer has to think about during the construction of a building and also discuss two **approaches** to constructing a building.
3. _____ Many people want to know what **impact** the building will have on the environment.
4. _____ You could **abbreviate** this as D-B-B.
5. _____ It is his or her job to design, determine the **specifications**, produce drawings, hire the best contractors or builders, and manage the entire process from beginning to end.
6. _____ This new approach is less risky because rather than designing everything and then building and hoping for the best, the design and building phases **overlap**.
7. _____ Think on a small **scale** for a minute.
8. _____ Today, architects or engineers need to understand the theory of structures and know how they will **endure** through time.

a. size
b. exact details
c. methods
d. continue
e. shorten
f. attractive
g. repeat
h. effect

Listening 3: Construction and Structural Engineering

Listening to a Lecture

The listening passage is a lecture from an introductory architecture class. The instructor is discussing some things an architect or engineer needs to think about. Throughout the lecture, the instructor uses several time signal words or phrases. Listen two times. The first time, write time signals in your notes using the abbreviations you developed. Make a list of other words you hear that might be good to abbreviate. The second time you listen, take notes on the details on the topic. Use a separate sheet of paper.

Checking Your Understanding: Main Ideas

Review your notes. Listen again to the lecture if necessary, and then put a check mark (✓) next to the statements that best reflect the main ideas.

1. _____ The way buildings look on the outside is the more "fun" part of the construction process.
2. _____ There are two approaches to constructing a building.
3. _____ The environment, planning, and structural theory are three things that need to be considered.
4. _____ The design-build approach is the better choice when constructing a big project.
5. _____ Several characteristics of columns are considered when using them in buildings.

Checking Your Understanding: Details

Use your notes, and put a check mark (✓) next to the best answer. Some questions have more than one answer.

1. When are environmental impact reports important?
   a. _____ in the past
   b. _____ in the present
   c. _____ in the future
2. What types of things are considered during the planning of a building?
   a. _____ materials
   b. _____ location
   c. _____ appearance
3. What are the two approaches to planning?
   a. _____ design-bid-build
   b. _____ design-build
   c. _____ structural theory
   d. _____ environmental impact
4. When did structural theory become important?
   a. _____ in the past
   b. _____ in the present
   c. _____ in the future
5. What factors are considered when determining the building capacity of columns?
   a. _____ dimension
   b. _____ shape
   c. _____ length
   d. _____ material

In-Depth Discussion

Work with a small group. Imagine your architectural firm has been offered the chance to develop a new hotel. Work together, and think about the art and science that is needed for your hotel. Prepare a presentation that addresses the questions.

1. What are the specifications? (how many floors and rooms, length, width?)

2. What is the schedule? (how long will it take, when do you expect to complete it)

3. What does it look like from the outside?

4. What materials are required for construction?

5. Where is it located?

6. How much will it cost? (budget considerations)

7. What are some of the challenges you expect during construction?

8. Does it serve any other functions other than housing (restaurants, gyms, apartments, shopping)?

9. What is the name of the hotel?

Rapid Vocabulary Review

From the three answers on the right, circle the one that best explains, is an example of, or combines with the vocabulary item on the left as it is used in this unit.

Vocabulary	Answers		
Synonyms			
1. comprising	creating	including	choosing
2. icon	symbol	fame	building
3. span	width	height	length
4. contrasts	differs	resembles	mirrors
5. minor	large	medium	small
6. alterations	changes	plans	designs
7. converted	figured	changed	remained
8. realize	understand	know	learn
9. floors	weights	levels	measurements
10. particular	specific	interesting	different
11. proposed	designed	suggested	constructed
12. required	necessary	important	optional
Combinations and Associations			
13. conflict ___	with	at	around
14. dating ___	to	on	from
15. under ___	threat	fear	alteration
16. become a ___	reality	detail	cue
17. coordinator of a ___	drawing	scale	process
18. hope for ___	the best	a risk	the design
19. figure ___	out	off	under
20. tell me ___	at	with	about

Synthesizing: Projects and Presentations

Short In-Class Speaking Assignments	Longer Outside Assignments
My Dream Office/Workspace	**Social Observation Report**
Describe your dream work environment. What kind of job do you have? Where is it located? What is special about your office or workspace? What factors influence the design of the space? Share your ideas with a small group.	Choose a place where a lot of students spend time. Sit in a place where you can observe different greetings and responses. Take notes on what you hear. Prepare a report that discusses the similarities and differences that you noticed.
Giving Encouragement	**Interesting Structure Reports**
Your instructor will set a timer for five minutes. Be prepared to state your field of study and talk about why you like it. If you haven't chosen a field yet, choose one that you are interested in. Express opinions. As you are talking, other students will use language to encourage the discussion.	Choose a skyscraper, bridge, tower, or landmark you would like to learn more about. Prepare a presentation about your choice. Include information about its architect, specifications (height, length, or other measurements), materials, location, budget, and schedule (how long it took to build). Give a short presentation to your classmates with the details. Include the goal of the structure, an estimate about how many people use it today, and some other interesting facts.

Vocabulary Log

To increase your vocabulary knowledge, write a definition or translation for each vocabulary item. Then write an original phrase, sentence, or note that will help you remember the vocabulary item.

Vocabulary Item	Definition or Translation	Your Original Phrase, Sentence, or Note
1. produce (v.)	make, create	This factory produces candy.
2. actual		
3. durable		
4. overall		
5. categorized		
6. natural		
7. capacity		
8. element		
9. utility		
10. favorite		
11. fulfill		
12. principles		
13. standard		

Vocabulary Item	Definition or Translation	Your Original Phrase, Sentence, or Note
14. visually		
15. applied		
16. construct (v.)		
17. aspects		
18. blend		
19. collections (n.)		
20. achievements		
21. comprehensive		
22. sector		
23. diverse		
24. agreements (n.)		
25. sites		